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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,076	12/29/2000	Shlomi Harif	AUS920000946US1	9022

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EXAMINER
PIZIALI, JEFFREY J

ART UNIT	PAPER NUMBER
2673	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/751,076	Applicant(s) HARIF, SHLOMI	
	Examiner Jeff Piziali	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). ____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on March 16, 2001. These drawings are acceptable.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1, 3-5, 7-9, 12-15, 17, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Furusho et al. (US 6,310,604).

Regarding claim 1, Furusho discloses a keyboard (see Column 16, Lines 20-27) apparatus comprising: a fabric [Fig. 17, 105] (see Column 14, Lines 22-35); a plurality of switch units [Fig. 19, 2] coupled to the fabric, wherein each switch unit within the plurality of switch units includes: a capsule/sealed-unit containing an electrically responsive liquid [Fig. 19, 106], wherein the electrically responsive liquid causes the capsule to increase in rigidity/viscosity in response to application of an electric field to the electrically responsive liquid; a switch [Fig. 19, 2b] coupled to the capsule, wherein a selected pressure applied to the capsule activates the

switch; and a plurality of electrical conducting lines [Fig. 19, 138] connected to the plurality of switch units (see Column 14, Line 66 - Column 15, Line 35).

Regarding claim 3, Furusho discloses the liquid causes the capsule to expand when an electrical field is applied to the electrically responsive liquid (see Column 9, Lines 37-45).

Regarding claim 4, Furusho discloses an article of wearing apparel (see Column 2, Lines 9-11).

Regarding claim 5, Furusho discloses the plurality of switches is coupled to the fabric by being embedded within the fabric (see Fig. 17; Column 14, Lines 22-35).

Regarding claim 7, Furusho discloses a number of the plurality of switch units have a different rigidity from the others in the plurality of switch units when an electric field is applied to the electrically responsive liquid (see Column 9, Lines 37-45).

Regarding claim 8, Furusho discloses an electrorheological fluid (see Column 9, Lines 37-45).

Regarding claim 9, this claim is rejected by the reasoning applied in the above rejection of claim 1, furthermore Furusho discloses an output configured for connection to a data processing system [Fig. 20, 4] (see Column 15, Lines 38-60).

Regarding claim 12, this claim is rejected by the reasoning applied in the above rejection of claim 1, furthermore Furusho discloses a data processing system comprising a bus system, a memory connected to the bus, wherein a set of instructions are located in the memory; and a processor unit connect to the bus system (see Fig. 20; Column 15, Lines 38-60).

Regarding claim 13, this claim is rejected by the reasoning applied in the above rejection of claim 1, furthermore Furusho discloses a pointing apparatus (see Column 16, Lines 20-28).

Regarding claim 14, Furusho discloses controlling a pointer on a display of a data processing system (see Column 16, Lines 20-28).

Regarding claim 15, Furusho discloses the capsule being in the shape of a rectangle [Fig. 10, 116] (see Column 11, Lines 29-43).

Regarding claim 17, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Regarding claim 19, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 6, 10, 11, 16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furusho et al. (US 6,310,604).

Regarding claim 2, Furusho does not expressly disclose a piezoelectric-sensitive component. However, the use of piezoelectric-sensitive components was well known and commonly understood in the field of switches, at the time of invention. Therefore, it would have been obvious to one skilled in the art at the time of invention to use a piezoelectric-sensitive component as Furusho's switch, so as to accurately sense applied force.

Regarding claim 6, Furusho does not expressly disclose a plurality of symbols in locations on the fabric identifying the plurality of switches. However, the use of identifying symbols was well known and commonly understood in the field of fabrics, at the time of invention. Therefore, it would have been obvious to one skilled in the art at the time of invention to use identifying symbols on Furusho's glove, so as to assist the user in properly wearing (distinguishing between the left and right hand, for instance) and using the glove.

Regarding claim 10, Furusho does not expressly disclose a wireless transmitter. However, the use of wireless transmitters was well known and commonly understood in the field

of data processing outputs, at the time of invention. Therefore, it would have been obvious to one skilled in the art at the time of invention to use a wireless transmitter as Furusho's output, so as to communicate with the data processing system without requiring a tangle of wires in-between.

Regarding claim 11, Furusho does not expressly disclose a universal serial bus connector. However, the use of universal serial bus connectors was well known and commonly understood in the field of data processing outputs, at the time of invention. Therefore, it would have been obvious to one skilled in the art at the time of invention to use a universal serial bus connector as Furusho's output, so as to communicate with the data processing system using a commercially popular peripheral interface type.

Regarding claim 16, Furusho does not expressly disclose an apron or a pair of pants. However, the use of aprons and pants was well known and commonly understood in the field of fabrics, at the time of invention. Therefore, it would have been obvious to one skilled in the art at the time of invention to use an apron and/or pants with Furusho's glove (see Column 2, Lines 10-15), so as to comfortably store the apparatus.

Regarding claim 18, this claim is rejected by the reasoning applied in the above rejection of claim 16.

Regarding claim 20, this claim is rejected by the reasoning applied in the above rejection of claim 16.

Response to Arguments

6. Applicant's arguments filed December 11, 2002 have been fully considered but they are not persuasive. The applicant contends the cited prior art of Furusho et al. (US 6,310,604) fails to teach a keyboard; each switch unit including a capsule; applying pressure to a capsule to activate a switch; expanding a capsule when an electrical field is applied; switches being embedded within a fabric; switches capable of differing rigidity; and a pointing device. The examiner respectfully disagrees on all these issues.

Furusho's device provides both keyboard and mouse (i.e. point device) functionality (see Column 16, Lines 20-28). Furusho's device may arguably differ in structure from the applicant's invention; however, such structural details have not been incorporated into pending claim language.

Furusho's plural switch units [Fig. 19, 2] are each individually coupled to (and thereby, by extension, include) a capsule/sealed-unit containing an electrically responsive liquid [Fig. 19, 106] (see Column 14, Line 66 - Column 15, Line 35). While Furusho's capsule is arguably shared in common by all the switch units, present claim language does not specify that each switch unit's capsule must be separate and distinct from the others.

Furusho's force sensors [Fig. 19, 2] inherently constitute pressure sensing switches (see Column 4, Lines 49-54 and Column 14, Line 66 - Column 15, Line 35). Although Furusho may

not use the specific term, "switch;" Furusho's force sensors provide equivalent switching functionality as has been claimed by the present invention.

Furusho's capsule electrorheological fluid is filled with an electrorheological fluid that exerts a tactile response in the presence of an electric field (see Column 2, Lines 1-63). When Furusho's electrorheological fluid hardens or softens, the resultant stress against the walls of the capsule will inherently, even if only to a minor degree, expand and contract Furusho's capsule. It should be noted that present claim language does not describe the extent to which the capsule expands.

Furthermore, Furusho discloses connecting both fabrics [Fig. 17, 105] and switches [Fig. 19, 2] to form the overall force display device [Fig. 19, 1] (see Column 14, Line 10 - Column 15, Line 35).

And finally, Furusho's force-sensing switches [Fig. 19, 2] experience varying degrees of rigidity, depending upon the viscous state of the electrorheological fluid in the capsule [Fig. 19, 106] (see Column 14, Line 66 - Column 15, Line 35).

By such reasoning, rejection of the claims is deemed proper and thereby maintained.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (703) 305-8382. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

J.P.
February 24, 2003

BIPIN SHALWALA
SUPERVISOR
TECH